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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SHOSHONE/EUREKA RESOURCE AREA
BATTLE MOUNTAIN DISTRICT

(ENVIRONMENTAL ASSESSMENT RECORD)

FOR THE

L GUND RANCH R&PP SALE X

(See attached Map and Legal Descriptions
for Location)

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I. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

A. Proposed Actions

1. To transfer, under the Recreation and Public Purposes Act of June 14, 1926, 7796.51 acres of public land located in Lander and Eureka counties (See attached map and photographs) to the University of Nevada.
2. After the transfer of land is completed, it is proposed by the University of Nevada's Plan of Development to do the following actions: (See Appendix 1 for locations).
 - a. Construct seven (7) miles of four-wire electric charged fence with two cattleguards.
 - b. Forage manipulation by chemical 2,4D on 120 acres; forage manipulation by fire treatment on 120 acres; 160 reseeded with crested wheat grass.
 - c. Reseed 500 acres of the Keystone seeding to crested wheat grass.
 - d. Livestock water developments.
 - e. Irrigation water developments (20-30 acres).

The land will be sold by the Bureau of Land Management as authorized in the Code of Federal Regulations 2740 and Public Law 95-278.

The United States would reserve title to any valuable minerals on the subject lands.

B. Alternatives

1. Lease or sell the land as authorized under FLPMA.
2. No action.

REPORT OF THE BOARD OF DIRECTORS

FOR THE YEAR ENDING 1964

The Board of Directors of the Corporation has the honor to submit herewith its report for the year ending 1964. During the year, the Corporation has continued its policy of expansion and development, and has achieved significant progress in its various activities.

The Corporation's operations have been characterized by a steady increase in production and sales, and by a continued commitment to research and development. The Board is pleased to report that the Corporation has maintained its position as a leader in its field.

The Corporation's financial performance has been excellent, and the Board is confident that the Corporation's future prospects are bright. The Board is grateful to the stockholders for their continued support and confidence.

The Corporation's management has been diligent in its efforts to improve the Corporation's operations and to increase its profitability. The Board is confident that the Corporation's management will continue to make significant contributions to the Corporation's success.

The Corporation's management has also been diligent in its efforts to improve the Corporation's financial position. The Board is confident that the Corporation's management will continue to make significant contributions to the Corporation's financial success.

The Corporation's management has also been diligent in its efforts to improve the Corporation's social and environmental performance. The Board is confident that the Corporation's management will continue to make significant contributions to the Corporation's social and environmental success.

The Corporation's management has also been diligent in its efforts to improve the Corporation's human resources. The Board is confident that the Corporation's management will continue to make significant contributions to the Corporation's human resources success.

The Corporation's management has also been diligent in its efforts to improve the Corporation's overall performance. The Board is confident that the Corporation's management will continue to make significant contributions to the Corporation's overall success.

The Corporation's management has also been diligent in its efforts to improve the Corporation's corporate governance. The Board is confident that the Corporation's management will continue to make significant contributions to the Corporation's corporate governance success.

The Corporation's management has also been diligent in its efforts to improve the Corporation's corporate culture. The Board is confident that the Corporation's management will continue to make significant contributions to the Corporation's corporate culture success.

II. DESCRIPTION OF THE EXISTING ENVIRONMENT

A. Non-Living Components

1. Climate

The climate is generally termed arid to semi-arid depending on the elevation. Temperature variation is considered extreme, as frost can be expected any month during an average year.

Temperatures can vary from 40 degrees below zero to 108 degrees. Average annual precipitation varies from eight inches at the lower elevations to over 15" in the mountain areas.

The majority of the precipitation occurs during winter in the form of snow. Spring rains of the "thunder storm" type occur and are essential for forage production since temperatures and wind prevents much of the snow moisture from being effective. The precipitation which falls in the form of snow is mainly important for aquifer recharge and the growth of grasses and forbs.

Relative humidity is very low throughout most of the year. The annual water evaporation rate is 60 to 72 inches.

2. Topography

Generally, the area is flat and rolling with low hills. Elevations range from 5643 feet to 6000 feet with 6% slopes in the valley to 30% in the benches and foothills. Aspect is generally east and west.

3. Soils

Soils in the area are variable and range from clayey to sandy skeletal. The clayey soils are shallow in depth and found on well-drained 4-8% slopes with moderate erosion potential. The fine-loamy soils range in depth from shallow to moderately deep and are found on well-drained slopes of 15 percent or less; with slight to moderate erosion potential.

1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It is a summary of the work done and the results achieved. It is a general overview of the work done and the results achieved.

2. The second part of the report deals with the specific work done during the year. It is a detailed account of the work done and the results achieved. It is a detailed account of the work done and the results achieved.

3. The third part of the report deals with the financial situation of the country and the progress of the work during the year. It is a summary of the work done and the results achieved. It is a summary of the work done and the results achieved.

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8. The eighth part of the report deals with the specific work done during the year. It is a detailed account of the work done and the results achieved. It is a detailed account of the work done and the results achieved.

9. The ninth part of the report deals with the financial situation of the country and the progress of the work during the year. It is a summary of the work done and the results achieved. It is a summary of the work done and the results achieved.

10. The tenth part of the report deals with the specific work done during the year. It is a detailed account of the work done and the results achieved. It is a detailed account of the work done and the results achieved.

Clayey skeletal soils range in depth from shallow to moderately deep and are found on well-drained slopes of 15 to 30 percent with slight to high erosion potential. Loamy soils are moderately deep and found on well-drained slopes of 50-75 percent, with high erosion potential. Loamy skeletal soils range from shallow to moderately deep on 30-75 percent slopes with moderate to high erosion potential. Sandy-skeletal soils are found on 50-75 percent slopes that are shallow and excessively drained with slight erosion potential.

Geology - Shale, chert and volcanic rock (andesite) are predominate in the mountains with alluvial fill below 6100 feet elevation.

4. Air and Water Quality

All of the streams in the area originate in the Simpson Park Range. Ephemeral stream flow results entirely from snow melt and flash-flood producing storms with a peak flow in early May. Sloughing and caving are frequently found in these channels and to a lesser extent in the mountains where the streams are of a perennial nature.

The quality of the water is generally good and is used by livestock and wildlife. Air quality is good and pollutants are minimal to nonexistent.

B. Living Components

1. Plants

Vegetation commonly found in the area includes:

<u>Common Name</u>	<u>Scientific Name</u>
Big sagebrush	<u>Artemisia tridentata</u>
Greasewood	<u>Sarcobatus vermiculatus</u>
Rubber rabbitbrush	<u>Chrysothamnus nauseosus</u>
Basin wildrye	<u>Elymus cinereus</u>
Shadscale	<u>Atriplex confertifolia</u>
Idaho fescue	<u>Festuca idahoensis</u>
Cheatgrass	<u>Bromus tectorum</u>
Alfalfa	<u>Medicago sativa</u>
Halogeton	<u>Halogeton glomerata</u>

1. The first part of the report deals with the general situation of the country. It is a very interesting and informative study of the country's development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's development.

2. The second part of the report deals with the economic situation of the country. It is a very interesting and informative study of the country's economic development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's economic development.

3. The third part of the report deals with the social situation of the country. It is a very interesting and informative study of the country's social development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's social development.

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No threatened or endangered plant species are identified in the immediate area as determined by A Report of Threatened and Endangered Species of Lander/Eureka/Nye Counties, by A. Holmgren et al, Utah State University, 1977.

2. Animals

Animals using the area include mule deer, mountain lion, domestic livestock, jackrabbits, cottontails, coyotes, ground squirrels, gophers, mice, sage grouse, chukar, and other non-game birds and animals. No rare or endangered animals have been seen in the area, but there have not been any surveys conducted to determine this possibility.

C. Ecological Interrelationships

The ecological interrelationships are typical of the sagebrush and northern desert shrub type.

The Simpson Park range on the east side of the proposed sale area has been indicated by the Nevada Department of Fish and Game as being a wintering range for mule deer. This area is also indicated as being a medium density chukar distri-area. However, no unique interrelationships are apparent.

D. Human Interest Values

A visual contrast rating has been completed (See ~~Attachment #1~~).

A wilderness inventory will have to be completed prior to sale of the land. A preliminary inventory implied that wilderness values are not present on the lands proposed for transfer.

Public meetings were held on the wilderness inventory results during the week of November 13-17, 1978, in Austin and Eureka. A comment period is also scheduled. If no wilderness values have been identified by the end of the comment period, then the land transfer can proceed. However, if wilderness values are identified, then the affected lands must be withheld from transfer pending Congressional action on the wilderness study area.

As stated in the Cultural Resources report, Preliminary Reconnaissance of Gund Ranch, by Davis, Jonathan O. and Elston, Robert, February 15, 1978 (BLM6-140(P)). "Gund Ranch is a working, self-supporting ranch. Activities necessary to the operation of the ranch will be destructive to the archeological record whenever the surface of the ground is disturbed, as in plowing, discing, drilling, leveling, ditching, and trampling by animals. The damaging effect of such activities is essentially cumulative, so that the fact that an area has already been somewhat disturbed does not mean its cultural resources should be written off. This means that operation of the ranch will inevitably result in damage to the cultural resources on it, unless measures are taken to mitigate or prevent the damage."

Therefore, it is recommended that a complete Cultural Resources clearance prior to any action, project or activity on any of the R&PP lands after the sale is completed.

There are some mining claims adjacent to the subject lands (See attached map). With transfer of land, the mineral estate is reserved as cited in 43CFR 2741.6(d) and (e). All mining claims will have to be cleared before sale can be made as cited in 43CFR2741.2(d). The existing conflicts are minor (5 acres or less), and these areas could be leased or excluded from the sale (see the Land Report for this action).

III. ANALYSIS OF PROPOSED ACTION AND ALTERNATIVES

A. Environmental Impacts

1. Anticipated Impacts

a. Proposed Actions

The actual transfer of ownership will not have any impacts on the land. However, after ownership has legally been transferred, there will be certain actions taking place on the subject lands that will cause impacts. These actions would include fencing, seeding, fire treatment, spraying, and water developments (See the attached University of Nevada Gund Ranch Activity Plan for complete detail of proposed actions).

The first part of the report deals with the general situation of the country. It is a very interesting and informative study of the country's development. The second part of the report deals with the specific details of the country's development. It is a very detailed and comprehensive study of the country's development. The third part of the report deals with the specific details of the country's development. It is a very detailed and comprehensive study of the country's development.

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CONCLUSION

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Following is a discussion of each action and anticipated impacts.

- (1) A loss of grazing privileges of range users on the subject lands will result from the proposed sale.

- (2) Fencing

- (a) There will be a slight disturbance to the vegetation and soil as a result of fence construction.
- (b) There will be some particulate matter caused by the vehicles
- (c) Fencing may present a barrier to migrating wildlife, electric-charged fencing could possibly harm raptors or other birds landing on the fence.
- (d) Any land that would be fenced could cause public access problems.
- (e) Fencing is a positive means of controlling animal distribution.

- (3) Chemical Spraying with 2,4-D/atrazine

- (a) Prevailing winds could cause the chemical to drift into areas where it could cause unwanted damage to existing vegetation.
- (b) Particulate matter would be suspended in the air during the spray application.
- (c) The 2,4-D would not only destroy unwanted vegetation but would also effect all other vegetation as well.
- (d) The 2,4-D would tend to seep into the soil and infiltrate the ground water that may cause the drinking water to become polluted and unsafe for human and animal consumption.

1. The first part of the report is a general introduction to the subject of the study. It discusses the importance of the study and the objectives of the research.

2. The second part of the report is a detailed description of the methodology used in the study. It includes information about the sample, the data collection methods, and the statistical analysis.

3. The third part of the report is a presentation of the results of the study. It includes tables, figures, and text describing the findings of the research.

4. The fourth part of the report is a discussion of the results and their implications. It discusses the strengths and limitations of the study and provides suggestions for future research.

5. The fifth part of the report is a conclusion. It summarizes the main findings of the study and provides a final statement on the importance of the research.

6. The sixth part of the report is a list of references. It includes all the sources of information used in the study, such as books, articles, and websites.

7. The seventh part of the report is an appendix. It includes any additional information that is relevant to the study, such as raw data, questionnaires, and interview transcripts.

8. The eighth part of the report is a glossary. It defines any technical terms or abbreviations used in the report.

- (e) Depending on the toxicity levels, both livestock and wildlife grazing on vegetation that has been treated either intentionally or accidentally could become sick or even die.
- (f) Chemical treatment can be both an economical and effective means of controlling unwanted and/or undesirable vegetation if done correctly.

(4) Fire Treatment

- (a) Quality of forage may be decreased or increased by burning, due to changes in plant composition.
- (b) The most important use of fire on ranges is to control woody species. This depends on the species to be burned as some species react different than others.
- (c) Fire treatment has a beneficial impact in that it is economical and faster acting then chemical control.
- (d) There will be particulate matter suspended in the air during the burning phase of the action.
- (e) A blackened landscape will result causing a visual contrast to the surrounding unburned sites.
- (f) Burning off the vegetation will destroy the watershed holding capacity of the existing vegetation which could result in flooding and erosion during the rainy seasons.

(5) Seeding

- (a) Clearing and plowing the land would cause a brief increase in the particulate matter in the air.



- (b) Clearing the land will have a negative impact on the sagebrush and rabbitbrush that will alter the cover and food for wildlife.
 - (c) The seedings would produce a change in the visual aspects of the landscape by adding a bright contrast to the otherwise drab monotonous character of the surrounding vegetation.
 - (d) Managing the bottomlands to bring back salt grass and Great Basin wildrye will increase the total food production from the parcel, for both livestock and wildlife.
 - (e) Increasing desirable vegetation will also increase prey populations which will benefit raptors and other predators.
- (6) Livestock and Irrigation Water Developments
- (a) Water developments could provide watering sites for livestock and wildlife.
 - (b) Alfalfa cultivation would increase the total food production from the parcel, for both livestock and wildlife. Bitterbrush would provide food and cover to wildlife.
 - (c) Development of irrigation waters could have an effect on the ground water supply by drawing it down as a result of using the well and sprinkler system.
 - (d) Livestock will tend to over-utilize and trample any water development.

b. Alternatives

- (1) Leasing or selling the land as authorized under FLPMA would result in the same anticipated impacts as the proposed action would be the same if sold to the University of Nevada. If not, there is no way to determine proposed actions if sold to another party.

- (2) No Action

If there is no action taken concerning the subject lands, then there will be no actions that would impact the environment.

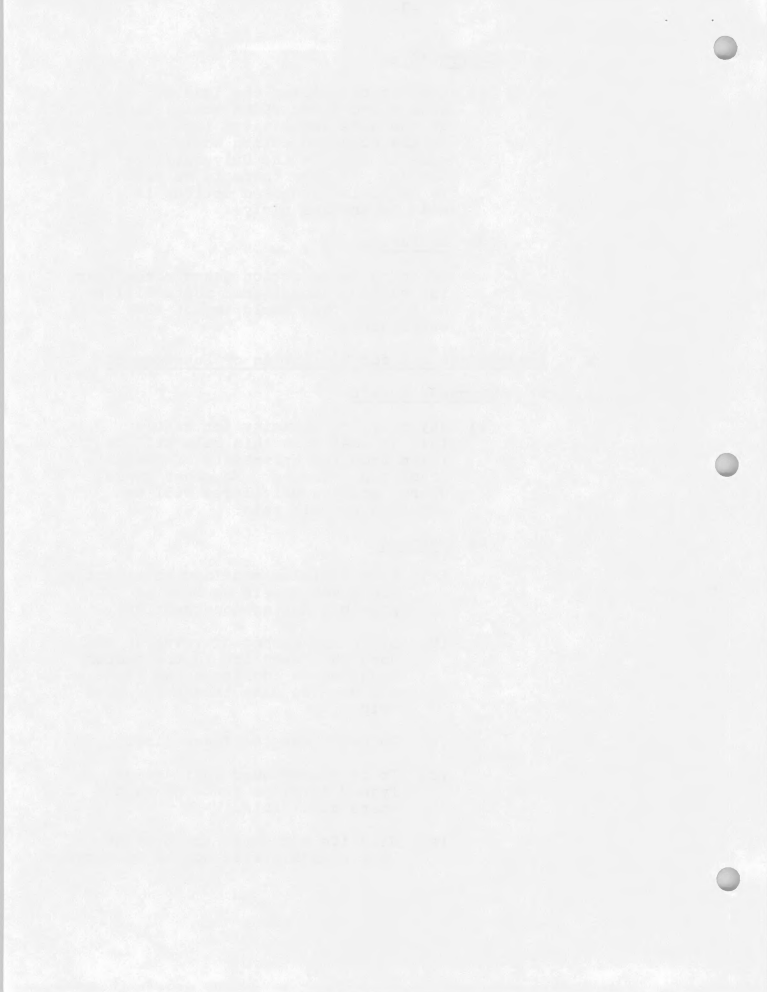
2. Recommendations for Mitigation or Enhancement

a. Proposed Action

- (1) Any carrying capacity for cattle that is lost with this sale will be taken from the University of Nevada's grazing privileges. No other range users' grazing privileges will be affected by this sale.

- (2) Fencing

- (a) Keep vehicles confined to existing roads and trails as much as possible during construction.
- (b) Limit the number of trips up and down the fenceline to the number required to construct the fence and use the same tracks for each trip.
- (c) Do not blade the fence line.
- (d) It is recommended that 4-wire, Type-D Antelope Fence be used where applicable.
- (e) Wildlife access to the Simpson Park Mountain will not be hindered.



- (f) There will be two cattle guards constructed on the Grass Valley road to accomodate public access.
- (g) Ensure that the electric charge is not of such magnitude that livestock or wildlife will be harmed if contact is made.
- (h) Remove the fences when research is concluded.

(3) Chemical Spraying with 2,4-D/atrazine

- (a) Apply spray during the morning hours and in a calm day to help prevent chemical drift and lessen the suspended particulate matter.
- (b) Keep livestock and wildlife out of the sprayed areas until the toxicity levels are safe.
- (c) Run periodic tests of the water in the area to ensure that levels of chemicals have not increased due to the spraying.

(4) Fire Treatment

- (a) Depending on the type of vegetation, ensure that the time of burning is consistent with the desired results.
- (b) Burn during the time of day that will help keep suspended particulate matter to a minimum.
Do not burn during windy days.
- (c) Revegetate as soon as possible to ensure soil holding capacity of new vegetation to help prevent erosion and flood damage.

(5) Seeding

Do not revegetate during high wind periods so that the least amount of particulate matter will become suspended and remain in the air.

THE
FEDERAL BUREAU OF INVESTIGATION
UNITED STATES DEPARTMENT OF JUSTICE
WASHINGTON, D. C. 20535

TO : DIRECTOR, FBI
FROM : SAC, NEW YORK
SUBJECT: [Illegible]

RE: [Illegible]

DATE: [Illegible]

BY: [Illegible]

(6) Livestock and Irrigation Water Developments

- (a) Before irrigating procedures, check with the state water engineer to get an estimate of the water table and ground water recharge to see if it is sufficient to accomodate the loss of water through the wells and sprinkling system.
- (b) Fence the spring sources to prevent livestock trampling and aid in wildlife use.
- (c) Provide for livestock distribution by putting in troughs at various locations.

(b) Alternatives

- (1) Leasing or selling the land as authorized under FLPMA would result in the same mitigating measures if the anticipated impacts remain the same.

(2) No Action

If there is no action taken concerning the subject lands, there will be no impacts to mitigate.

3. Residual Impacts

- a. The livestock grazing license for the University of Nevada will be reduced by the number of AUMs lost due to the sale.
- b. There will be particulate matter suspended in the air as a result of all the proposed actions.
- c. There will be existing vegetation either destroyed or altered due to fencing, seeding, chemical and fire treatments.
- d. There may be some alteration in the watershed soil holding capacity of vegetation due to the fire treatments.

1. The first part of the report deals with the general situation of the country and the results of the survey. It is divided into two sections: the first section deals with the general situation of the country and the second section deals with the results of the survey.

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- e. There will be some chemical drifting into other areas where it is not wanted resulting in vegetative alteration.
- f. Livestock will tend to overutilize water developments which will result in vegetative trampling.
- g. Electrical charged fences will effect raptors as they land on them.
- h. The fence line will be a visible contrast until the vegetation has a chance to reestablish itself along the scarred areas.
- i. Ground water discharge and level of the water table may be altered by irrigation levels from the sprinkler systems.
- j. There would be improved food production and cover resulting from the seedings and bottom land revegetation.

B. Long-Term Effects of the Proposed Action

If the subject land was purchased by the University of Nevada, they would use it for a range research facility which entails many actions that would ultimately increase the productivity and value of the land and, be in keeping with Executive Order 11988 (42FR: 26951).

C. Irreversible or Irretrievable Commitments of Resources

The AUMs attached to the subject lands will be lost and will be taken from the University of Nevada's grazing privileges. It is recommended the BLM reserve a floating easement on the land east of Highway 21 to provide access and flexibility for UNR.

IV. MFP REVIEW

The Shoshone/Eureka Resource Area MFP has been reviewed and no conflicts exist.

V. PERSONS, GROUPS, AND GOVERNMENT AGENCIES CONSULTED

Tony Lesperance, University of Nevada

Bob York, Archaeologist, BLM, NSO
State Clearinghouse, Office of the Governor
The Wilderness Society, Washington, D.C.
The Sierra Club, Toiyabe Chapter
The Nevada Outdoor Recreation Association, Nevada Chapter

VI. INTENSITY OF PUBLIC INTEREST

Public interest is high and Congress has passed PL 95-278 authorizing the land sale through R&PP to the University of Nevada.

VII. PARTICIPATING STAFF

Dan L. Naegle, Realty Specialist, Battle Mountain District
Peter F. Humm, Realty Specialist, Shoshone/Eureka R.A.
Patrick Welch, Archaeologist, Shoshone/Eureka R.A.
Kelly M. Madigan, Environmental Coordinator

VIII. SUMMARY OF ENVIRONMENTAL IMPACTS

The residual impacts would be that the livestock grazing privileges lost from the subject lands will be taken from the grazing licence of the University of Nevada. Particulate matter will be suspended as a result of all the proposed actions after the land is sold. Existing vegetation will be either altered or destroyed due to fencing, seeding, chemical and fire treatments. There may be some alteration in the watershed soil holding capacities of the vegetation due to the fire treatments. The prevailing winds may cause chemicals to drift from area to area during the spraying treatments. Water developments will result in livestock trampling and overuse. Electrical charged fencing may cause some problems with raptors. The fence line scars will be visible until the vegetation has a chance to reestablish. Ground water discharge and water table levels may be effected by the irrigation sprinkling systems. The seedings and bottom land revegetation will help establish livestock forage and wildlife habitat by providing increased food production and cover.

Since the land will be used for range research, it is conceivable that the public can also benefit through improved ranching techniques and range management practices. The ultimate productivity and value of the land will increase with this sale.

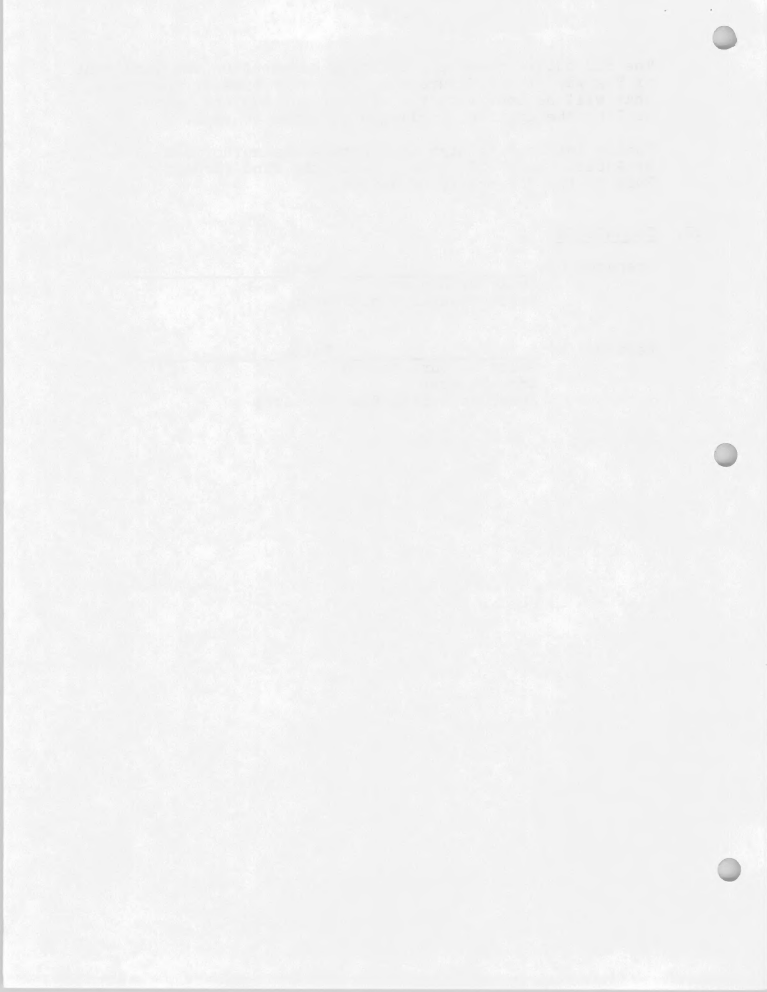
The BLM should reserve a floating easement on the land east of Highway 41 for future use. The only present resources that will be lost with the sale of the subject lands will be the grazing privileges attached to them.

Public interest is high as Congress has authorized by Public Law 95-278, the sale of the land through R&PP to the University of Nevada.

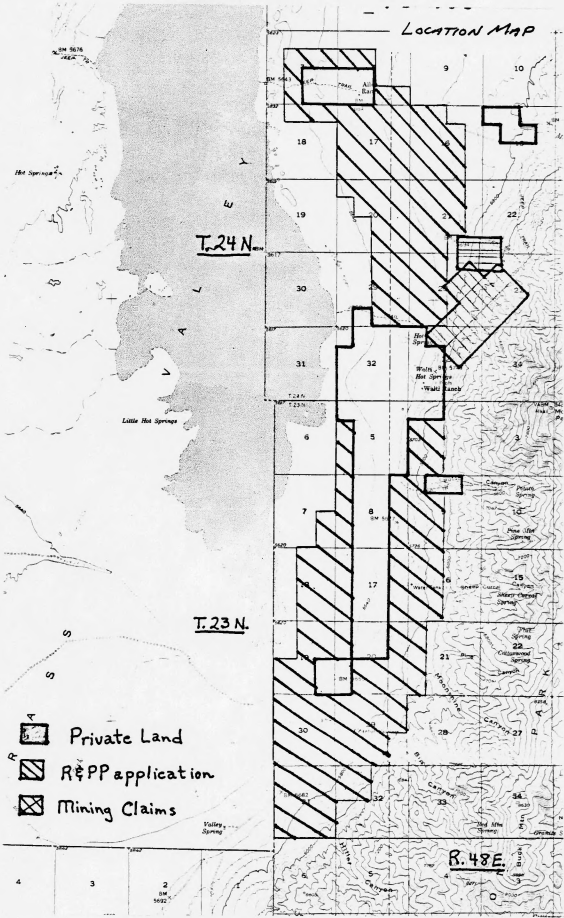
IX. SIGNATURES

Prepared by: _____ Date: _____
Kelly M. Madigan
Environmental Coordinator

Reviewed by: _____ Date: _____
Colin P. Christensen
Area Manager
Shoshone/Eureka Resource Area



LOCATION MAP



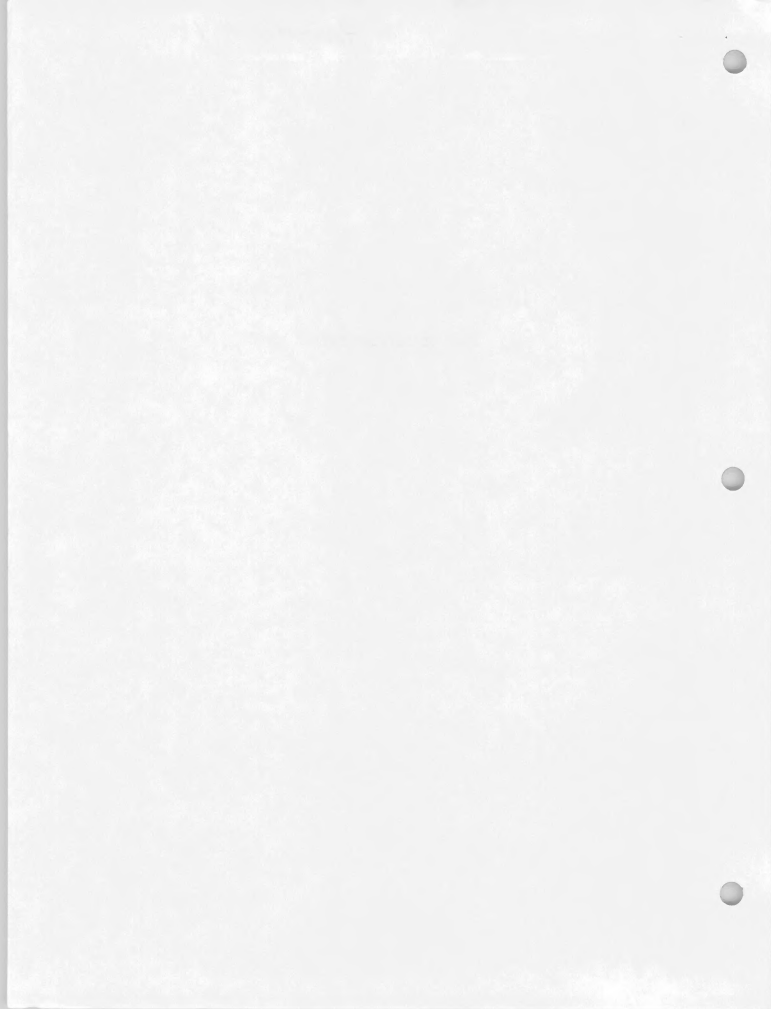
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Appendix # 1

PLAN OF DEVELOPMENT



I. Fencing

1) Plot fencing - Plots will be fenced on a temporary basis as appropriate. These will be discussed later.

2) Management fencing - Fencing is an expensive item, therefore, it will be kept to a minimum. A boundary fence is not anticipated. Transfer lands in township 24 north, range 48 east require no additional fencing for livestock management. Lands in township 23 north, range 48 east have been historically abused, therefore, management will be enhanced with certain fences. These fences are marked in red on the attached map (Attachment 1). These fences are listed as 1, 2 and 3.

1. A fence will be built on an east west line originating at the south east corner of the 160 acre experimental field. This fence will follow the section line between sections 20 and 29, and 21 and 28, continuing east with a dead end at the eastern boundary of the transfer. This fence will effectively create a 1700 acre bench land field consisting of all transfer land north of this fence, east of present deeded lands and south of our present boundary fence in section 4. A fence on the eastern boundary is not anticipated as the Simpson Park Mountains will act as a sufficient natural boundary. This fence will be one mile long.

2. Fence #2 will originate at the south east corner of the 160 acre experimental field, follow a south west line immediately to the west of the main Grass Valley road until it intersects the west transfer line (west side section 31). At this point it will follow section 31 south and east, terminating at the south east corner of section 31. This fence will again create a three-sided field of approximately 1600 acres with the Simpson Park Mountains making a natural boundary to the east. This fence will be approximately 3-3/4 miles long.

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3. Fence #3 will start at the intersection of the Grass Valley Road and the west transfer boundary continue north on the west side of sections 30 and 19. It will progress east at the mid-point of section 19 and terminate at the north west corner of the 160 acre experimental field. This will result in a fully fenced field of approximately 1000 acres. The existing drift fence originating at the north west corner of the 160 acre experimental field and going westward to the lake bed will be removed. Fence #3 will be approximately 2-1/4 miles long.

These three fences will total 7 miles in length. They will require two cattle guards on the Grass Valley road. These will be constructed to meet the specifications of Lander County. Fence construction will be 4 wire, electric with charging occurring only during livestock use. This will result in minimum wildlife interference during winter. Additionally, wildlife access to the Simpson Park Mountains will not be hindered.

II. Range Forage Research

Range research efforts will be intensified on degraded sagebrush communities existing on alluvial fans. Immediate research areas will lie in sections 8, 9, 16, 17, 21, 22, 29 and 30 township 23 north, range 48 east. Eleven plots of approximately 40 acres each have been located and flagged. Their exact location appears on the attached map (Attachment 2). Nine plots will actually be used with three being subjected to forage manipulation with the 2, 4-D/atrazine treatment, 3 being subjected to fire and 3 remaining as checks. Within 2, 4-D/atrazine treatments, one field will be early grazed, one continuous grazed, and one handled as a rest rotation field. All three fields would be reseeded with crested wheat. In fire treatments, one would be rehabilitated with crested wheat, one would receive no treatment, while the third would receive grazing management. Check fields would receive no grazing, continuous grazing rest rotation. Consequently, 2, 4-D/atrazine would be applied to 120 acres, crested wheat seeded to 160 acres and 120 acres burned.

Range forage research will also be applied to bottom lands primarily covered by greasewood/rabbitbrush. These lands will not be subjected to revegetation but will be managed to enhance the return of saltgrass and Great Basin Wildrye. Treatments will probably include combinations of brush removal followed by protection from grazing and spring burning. Plots or treatments have not been designated. This research will be conducted in section 30, township 23 north, range 48 east and sections 17 and 20, township 24 north, range 48 east.

Plots will be fenced using temporary electrical fence. Upon completion of research, fencing will be removed.

III. Range Forage Improvement

Specific sites for forage improvement will be developed. However, these developments will be based upon research results. Consequently, developments of this material generally will occur after a minimum of 5 years or longer.

One site has been selected for improvement during the second year (approximately) after transfer. Approximately 500 acres of the old Keystone seeding exist on transfer lands. This portion of the Keystone seeding has degraded during previous years. Stand density has decreased with extensive invasion of sagebrush occurring. This stand will be revegetated to provide an adequate area of crested wheat for grazing studies. This area occupies a strip of land in sections 16, 21 and 28, township 24 north, range 48 east. It is outlined in yellow on Attachment 1.

IV. Livestock Water Development

Transfer lands, as they presently exist, are adequately watered with the exception of the northern portion, or those lands lying between the Walti and Allen properties. However, with more intensive management and smaller fields, need will exist to develop additional water. Approximately six sites have been suggested as possible areas for stock water development. These are marked in black on Attachment 1. Development of stock water offers unique opportunities to study alternative sources of energy as well as possible alternative uses of surplus water for such functions as wildlife habitat.

2. The second part outlines the various methods and tools used to collect and analyze data. This includes both traditional manual processes and modern automated systems.

3. The third part describes the results of the data analysis, highlighting key trends and patterns. It also identifies areas where further investigation or action is required.

4. The fourth part provides a detailed breakdown of the findings, including specific data points and statistical analysis. This section is crucial for understanding the underlying causes of the observed trends.

5. The fifth part discusses the implications of the findings for the organization. It outlines the potential risks and opportunities associated with the current state of affairs.

6. The sixth part presents a series of recommendations and suggestions for improving the organization's performance. These are based on the insights gained from the data analysis.

7. The seventh part concludes the document by summarizing the main points and reiterating the importance of ongoing monitoring and evaluation.

8. The eighth part includes a list of references and sources used in the research and analysis.

9. The ninth part contains a glossary of key terms and definitions used throughout the document.

10. The tenth part provides contact information for the author and any other relevant parties.

V. Irrigation Water Development

Irrigated forages are essential to offset the use of range forage. As range forage production increases, need will exist at the Gund Research and Demonstration Ranch to improve the irrigated forage base. Unfortunately, this is a costly area in both development and continuing production (fossil fuel). Inadequate economic information exists on the establishment of irrigation projects from a raw beginning to fully assess how such developments may fit into western agricultural developments. Therefore, a development utilizing a large well and circular sprinkler system is being considered. There are several possible locations but the most promising exists in section 17, township 24 north, range 48 east. This area is marked in green on Attachment 1. Complete economic assessment of this type of development would offer valuable data in overall land management.

Additionally, two sites of approximately 20-30 acres exist where sufficient spring runoff water exists to create short season forage production. These exist in sections 9 and 29 of township 23 north and range 48 east. They are marked in green on both Attachments 1 and 2. These would be based on surplus waters from Potato Canyon and combination of waters from No Name and Hellar Canyons. Development of these irrigated areas is not anticipated during the first two years. Economic assessment of these developments would offer comparisons to major developments.

VI. Other Development

Transfer lands offer many unique opportunities to investigate developmental procedures and their effect upon not only natural resources but ultimately their effect upon the productiveness of the land. These developments will be the result of research findings during the coming years. However, by the very nature of research, the extent direction of these developments would be difficult to predict. Fortunately, the Gund Research and Demonstration Ranch does offer the unique opportunity to study the impact before the technique is applied to the overall land mass.

The following information was obtained from a review of the files of the [redacted] and [redacted] and is being furnished to you for your information. It is to be understood that this information is being furnished to you in confidence and is not to be distributed outside of your office.

[The remainder of the page contains several paragraphs of extremely faint, illegible text, likely representing a memorandum or report. The text is too light to transcribe accurately.]

CRESTED WHEAT

IRRIGATED AREA 2

STOCK H₂O DEVELOPMENT

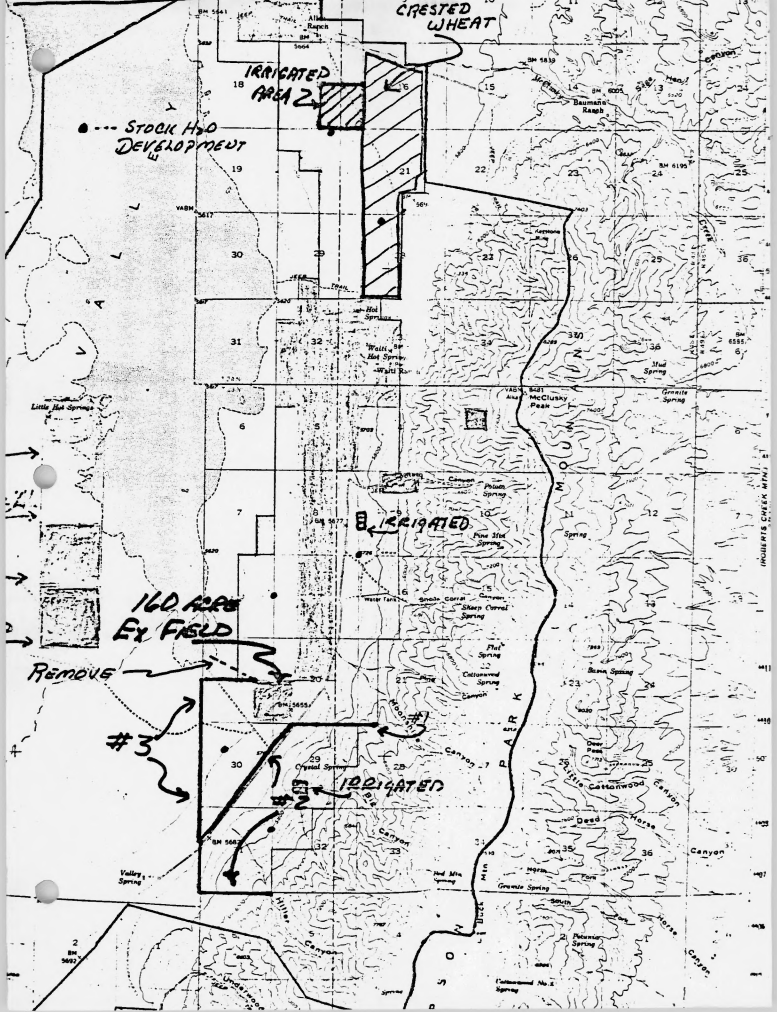
IRRIGATED

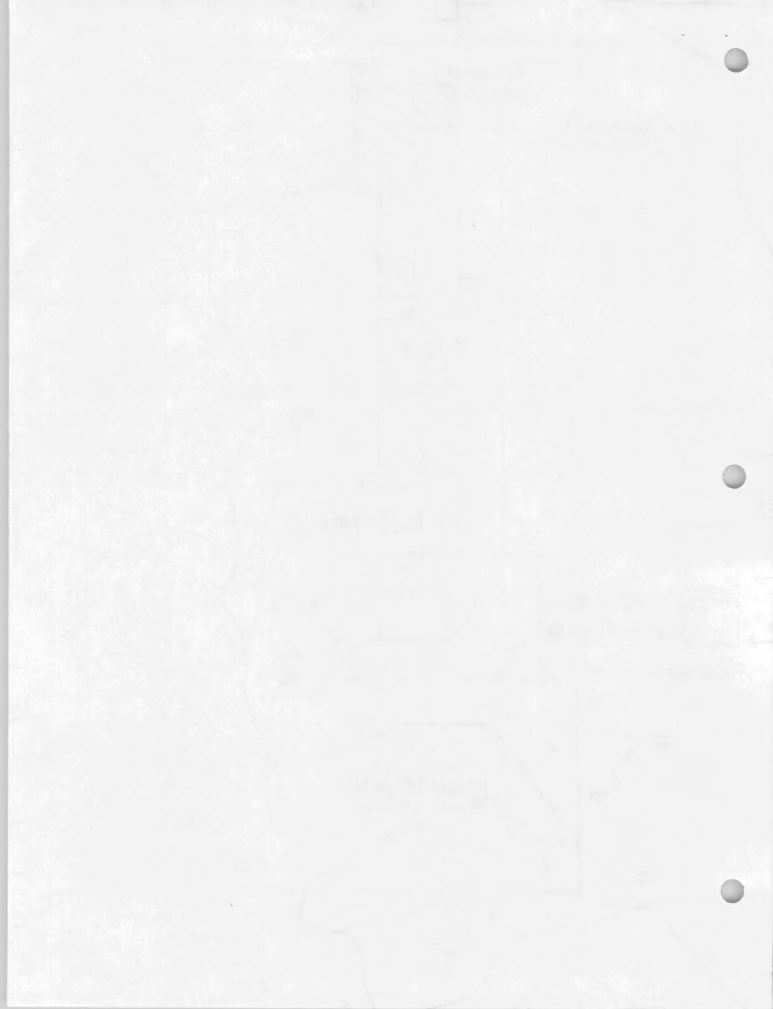
160 ACRE EX FIELD

REMOVE

#3

IRRIGATED





(40 acre plot locations)

TREATMENTS

4-D / Atrazine

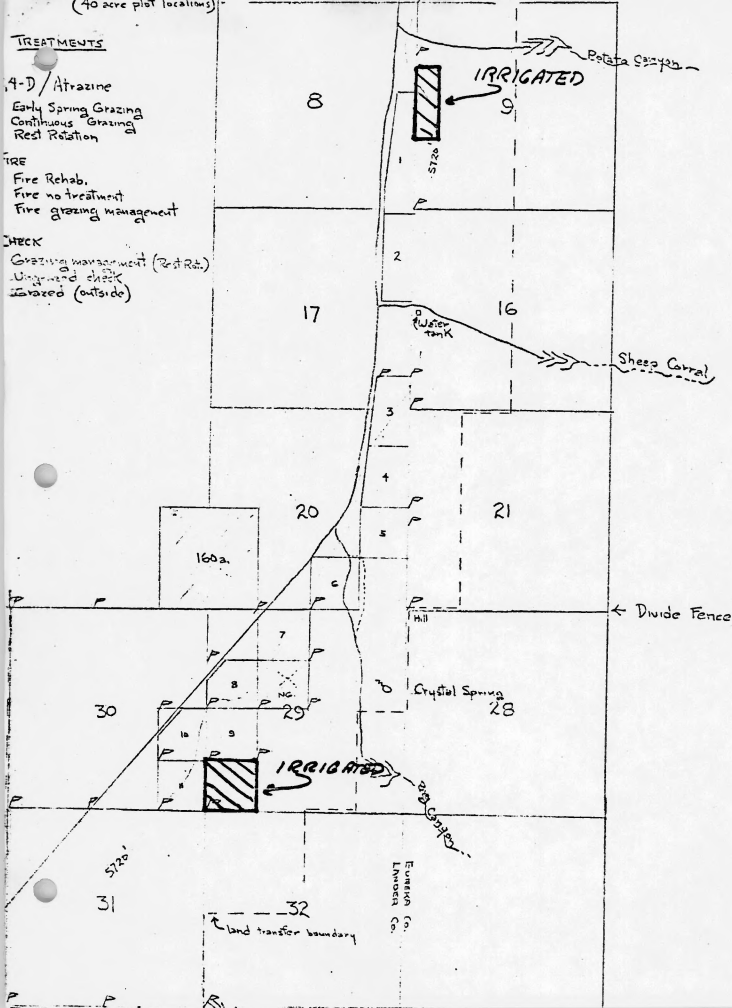
Early Spring Grazing
Continuous Grazing
Rest Rotation

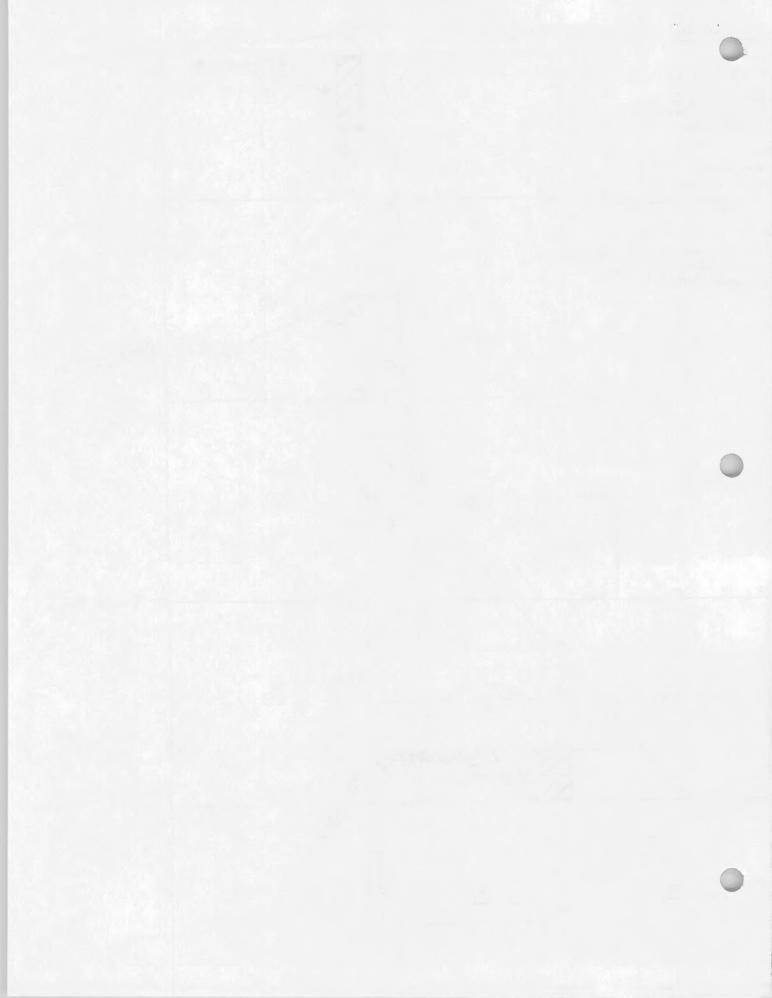
FIRE

Fire Rehab.
Fire no treatment
Fire grazing management

CHECK

Grazing management (Rest Rot.)
Ungrazed check
Irrigated (outside)





"R47E

R48E

WATER HOT SPRINGS
15" TOPO QUAD

BUREAU OF LAND MANAGEMENT

Library
Denver Service Center

T
24
N

T
23
N

LAND STATUS

☐ PUBLIC

☐ Public Water

☐ Reserve

☐ RAPPAN

☐ 16-20 SEP.

☐ NATURALIST

☐ UNIV. of W.

☐ E.L. BOUMER

☐ GRS. CO. 12

☐ RANCHES

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